AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A fuel cell system comprising:

a plurality of fuel cell stacks connected in parallel, ~~and~~ each of said stacks supplying one of a plurality of ~~a gross~~ currents for a load;

a plurality of inputs to and a plurality of outputs from said stacks that affect respective ones of said plurality of currents; and

a controller that ~~controls~~ determines ~~said~~ a gross load current based upon said plurality of currents, compares said gross load current with a desired current through said load, and ~~to~~ produces ~~a~~ said desired current through said load ~~by sensing gross load current in the course of isolating each of the stacks, and individually balancing individual stack currents~~ by adjusting, based on said gross load current, at least one parameter affecting at least one of said inputs and outputs to produce a desired current from one or more of said plurality of currents of said stacks individually.

2. (Original) The fuel cell system of claim 1 wherein said controller adjusts at least one of an anode input, an anode output, a cathode input and a cathode output.

3. (Original) The fuel cell system of claim 1 wherein the at least one parameter comprises one of pressure, humidity, stoichiometry, nitrogen dilution and temperature.

4. (Original) The fuel cell system of claim 1 wherein said stacks include equal pluralities of cells.

5. (Canceled)

6. (Original) The fuel cell system of claim 1 wherein said controller controls a first current through a first of said stacks and a second current through a second of said stacks, the second current controlled independently of the first current.

7. (Original) The fuel cell system of claim 6 wherein said controller controls the first and second currents based on set points proportional to active areas of said first and second stacks.

8. (Original) The fuel cell system of claim 1 further comprising a contactor connected between one of said stacks and the load.

9. (Original) The fuel cell system of claim 1 further comprising a current sensor that senses a current generated by one or more of said stacks;

wherein said controller uses said sensed current to determine said gross load current.

10. (Original) The fuel cell system of claim 1 wherein said controller uses said gross load current to determine a gross cathode stream mass flow rate.

11. (Original) The fuel cell system of claim 1 further comprising a pair of oxygen sensors that sense oxygen consumption by one or more of said stacks;

wherein said controller uses said sensed oxygen consumption to determine said gross load current.

12. (Original) The fuel cell system of claim 1 wherein a total power is adjusted by adjusting the plurality of parallel stacks.

13. (Currently Amended) A fuel cell system comprising:

a plurality of fuel cell stacks electrically connected in parallel, each of said stacks supplying one of a plurality of currents, which ~~to~~ collectively supply a gross load current, each stack comprising a plurality of inputs and outputs, that affect one of said plurality of currents, wherein said inputs and outputs are affected by a plurality of parameters; and

a controller that determines one of said plurality of [[~~a~~]] currents from one of said stacks to said ~~the~~ load ~~by sensing gross load current in the course of isolating each of the stacks~~, and, based on said gross load ~~determined~~ current, adjusts at least one of said parameters affecting one of said stacks to regulate current through said ~~the~~ load~~,~~

~~thereby individually balancing individual stack currents by adjusting parameters affecting the stacks for each of the stacks individually~~.

14. (Original) The fuel cell system of claim 13 wherein said controller produces a desired current from at least one of said stacks to the load.

15. (Original) The fuel cell system of claim 13 wherein the at least one of said parameters comprises one of pressure, humidity, stoichiometry, nitrogen dilution and temperature.

16. (Original) The fuel cell system of claim 13 wherein said controller adjusts at least one of an anode input, an anode output, a cathode input and a cathode output.

17. (Original) The fuel cell system of claim 13 wherein said controller determines a gross load current using the determined current, and balances said inputs based on the gross load current.

18. (Original) The fuel cell system of claim 13 wherein said controller determines a gross load current using the determined current, and balances a plurality of stack currents based on the gross load current.

19. (Currently Amended) A method for controlling current ~~power~~ to a load supplied by a plurality of fuel cells, comprising:

combining the fuel cells to provide a plurality of fuel cell stacks;

connecting the stacks in parallel; and

determining a gross load current based upon a plurality of currents of said stacks, and controlling at least one of an input to and an output from a given stack, based upon said gross load current, to provide regulation of a desired current through the given stack~~, including sensing gross load current in the course of isolating each of the stacks, and individually balancing individual stack currents by adjusting parameters affecting the stacks for each of the stacks individually~~.

20. (Original) The method of claim 19 further comprising using the desired current through the given stack to provide a desired current to the load.

21. (Original) The method of claim 19 further comprising combining the fuel cells to provide stacks having equal pluralities of cells.

22. (Original) The method of claim 19 wherein controlling at least one of an input to and an output from a given stack comprises controlling at least one of pressure, humidity, stoichiometry, nitrogen dilution and temperature.

23. (Original) The method of claim 19 wherein controlling at least one of an input to and an output from a given stack comprises controlling at least one of an anode input and a cathode input.

24. (Original) The method of claim 19 wherein controlling at least one of an input to and an output from a given stack comprises:

determining a stack load current through at least one of the stacks; and

determining the desired current through the given stack using the determined stack load current.

25. (Original) The method of claim 19 wherein controlling at least one of an input to and an output from a given stack comprises:

determining oxygen consumption across the given stack; and

determining the desired current through the given stack using said determined oxygen consumption.

26. (Original) The method of claim 25 wherein said determining oxygen consumption comprises determining oxygen concentrations in a cathode inlet and outlet.

27. (Currently Amended) The method of claim 19 wherein controlling at least one of an input to and an output from a given stack comprises:

~~determining a gross load current; and~~

using said gross load current to determine a gross cathode stream mass flow rate.

28. (Original) The method of claim 19 further comprising controlling at least one input to a given stack to eliminate a current through the given stack.

29. (Original) The method of claim 19 further comprising controlling at least one input to a plurality of said stacks to control a plurality of currents through said plurality of stacks.

30. (Original) The method of claim 19 further comprising changing the plurality of parallel stacks to change power to the load.

31. (Currently Amended) A method for controlling current ~~power~~ to a load supplied by a plurality of fuel cells, comprising:

combining the fuel cells to provide a plurality of fuel cell stacks, each of said stacks having a standard number of cells;

electrically connecting said stacks in parallel to provide a standard voltage range across each of said stacks;

determining a gross current to the load;

obtaining a desired set-point for current from one of said stacks, based upon said gross load current; and

regulating current produced by said one of said stacks around said set-point;

said obtaining and regulating performed by controlling at least one of a plurality of parameters affecting at least one of an input to and an output from at least one said stack~~, including sensing gross load current in the course of isolating each of the stacks, and individually balancing individual stack currents by adjusting parameters affecting the stacks for each of the stacks individually~~.

32. (Canceled)

33. (Currently Amended) The method of claim 31 further comprising:

~~determining a gross current to the load; and~~

balancing currents from the stacks based on said determined gross load current.

34. (Previously Presented) The method of claim 31 wherein the desired set point for current from one of the stacks is proportional to an active area of the one of the stacks.

35. (Previously Presented) A method for controlling current ~~power~~ to a load supplied by a plurality of fuel cells, comprising:

combining the fuel cells to provide a plurality of fuel cell stacks;

electrically connecting said stacks in parallel;

determining a gross current to the load; and

balancing currents produced by said stacks based on said gross load current to provide a desired load current~~, including sensing gross load current in the course of isolating each of the stacks~~,

said balancing performed by adjusting one or more parameters affecting at least one of an input to and an output from at least one of said stacks for each of the stacks individually.

36. (Original) The method of claim 35 further comprising determining an oxygen consumption level in a stack to determine a current level across the stack.

37. (Original) The method of claim 36 wherein determining an oxygen consumption level comprises comparing oxygen concentrations in a cathode inlet and outlet.

38. (Original) The method of claim 35 wherein balancing currents produced by said stacks comprises determining a current through a stack to the load.

39. (Original) The method of claim 38 wherein said determining a current is performed using one of a current sensor and an oxygen sensor.